

III. Remarks

A. Status of the Application

Claims 1-6, 8-12 and 23-28 are pending. Claims 1-3 and 8-9 have been amended. Claims 7 and 13-22 have been cancelled without prejudice or disclaimer. New claims 23-28 have been added.

None of the amendments made herein is in response to the present rejection of the claims. Rather, the amendments made herein are made to enhance the Applicants' patent portfolio with claims of varying scope.

Favorable consideration of claims 1-6, 8-12 and 23-28 in light of the following remarks is respectfully requested.

B. Affirmation of Election

The election without traverse to prosecute the invention of Group I, namely, claims 1-14 is hereby affirmed.

Claims 15-22 were withdrawn from consideration and have been cancelled. Applicants reserve the right to pursue the subject matter of claims 15-22 in one or more related applications.

C. Drawings Objection under 37 C.F.R. § 1.83(a)

The drawings stand objected to under 37 C.F.R. § 1.83(a). According to the Office action mailed December 2, 2005, it is alleged that certain features of original claim 14, namely, "the pumping of sealing composition through a drill string and bit, circulating the excess out of the hole, and removing the drill string" must be shown in the drawings or the features must be cancelled from the claim. Applicants disagree with the Examiner's objection to the drawings.

Notwithstanding the foregoing and for reasons other than the objection to the drawings, claim 14 has been cancelled without prejudice or disclaimer. Therefore, it is requested that the objection to the drawings under 37 C.F.R. § 1.83(a) be withdrawn.

D. Rejections under 35 U.S.C. § 102(b)

Claims 1-5 and 13 stand rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 3,189,089 to Carter ("Carter '089"). As noted above, claim 13 has been cancelled. Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Carter '089 describes a method of cementing wells at relatively low temperatures, in which the cement slurry is pumped or placed in the desired location in the well, and thereafter the well casing or pipe is heated by the reaction of certain metals in aqueous solution displaced therein and thus the cementing column and formation. (Col. 3, lines 53-59).

As provided in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." Carter '089 fails to meet the requirements of MPEP §2131 with respect to claims 1-5 because Carter '089 fails to teach or suggest each and every element of these claims.

Claim 1 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 1 includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Carter '089.

Rather, Carter '089 describes a method in which after cement is mixed and displaced to the desired area in the well bore, a solution or liquid is placed behind the top plug. The liquid is heated a predetermined amount by the exothermic reaction of metals in the liquid which heats the casing in the well bore and consequently the cementing column and the formation. (Col. 2, lines 27-35). Carter '089, however, does not disclose or suggest preparing a sealing composition that includes a latex sealant and placing a heating tool in casing and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

In view of the foregoing, Applicants submit that Carter '089 fails to meet the requirements of MPEP §2131 with respect to claim 1 because Carter '089 fails to teach every element of this claim. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 USC §102(b) over Carter '089 be withdrawn.

Claims 2-5 depend directly or indirectly from claim 1 and therefore include at least the same elements as claim 1. Accordingly, Applicants request that the rejection of claims 2-5 under 35 USC §102(b) over Carter '089 be withdrawn for at least the same reasons as noted above with respect to claim 1.

Claims 1, 2, 9 and 10 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 4,489,785 to Cole ("Cole '785"). Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Cole '785 describes a method of sealing a conduit within a subterranean formation utilizing an epoxy resin composition. (Col. 2, lines 3-5). The epoxy resin composition includes epoxy resin, a curing or hardening agent, a liquid diluent, an optional coupling agent and a solid diluent. (Col. 2, lines 20-23).

As provided in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." Cole '785 fails to meet the requirements of MPEP §2131 with respect to claims 1, 2, 9 and 10 because Cole '785 fails to teach or suggest each and every element of these claims.

Claim 1 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 1 includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Cole '785.

Claim 9 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 9 includes preparing a sealing composition comprising an epoxy liquid comprising resin, associated hardener and inert filler material; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Cole '785.

Rather, Cole '785 describes a method of sealing conduit within a subterranean formation using an epoxy resin composition in which the epoxy resin composition is heated by the subterranean formation and the curing reaction to a temperature above 140°F. at which temperature the composition begins more active polymerization. (Col. 5, lines 13-17). Cole '785, however, does not disclose or suggest preparing a sealing composition that includes a latex sealant or placing a heating tool in casing and operating the heating tool to heat a sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

In view of the foregoing, Applicants submit that Cole '785 fails to meet the requirements of MPEP §2131 with respect to claims 1 or 9 because Cole '785 fails to teach every element of these claims. Accordingly, Applicants respectfully request that the rejection of claims 1 and 9 under 35 USC §102(b) over Cole '785 be withdrawn.

Claims 2 and 10 depend from claims 1 and 9, respectively, and therefore include at least the same elements as claims 1 and 9. Accordingly, Applicants request that the rejection of claims 2 and 10 under 35 USC §102(b) over Cole '785 be withdrawn for at least the same reasons as noted above with respect to claims 1 and 9.

Claims 1, 2 and 13 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 4,809,780 to Shen ("Shen '780"). As noted above, claim 13 has been cancelled. Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Shen '780 describes a method of selectively sealing thief zones in a formation. A saline pre-flush water is injected into an injection well, followed by at least one slug of a saline solution of heat-sensitive sealing fluid. The solution of sealing fluid is spiked with a high concentration

of salts to achieve high conductivity and low resistivity. After the slug is placed deep inside the formation with the aid of a saline push water, electrical conductors are lowered into the formation. An AC electric current flow is impressed to the conductors and the formation is heated up by the resistivity of the conducting brine. Due to the high conductivity imparted to the heat-sensitive sealing fluid, the slug heats up preferentially. The heated sealing fluid undergoes an in-situ transformation to seal the thief zones. After the heating process is completed, the conductors are retrieved. (Col. 3, lines 20-35).

As provided in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." Shen '780 fails to meet the requirements of MPEP §2131 with respect to claims 1 and 2 because Shen '780 fails to teach or suggest each and every element of these claims.

Claim 1 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 1 includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Shen '780.

Rather, Shen '780 describes a method in which electrical resistance heating is induced in a formation to trigger the sealing of thief zones. As defined in Shen '780, the term "electrical resistance heating" means heating of a formation caused by passing an electrical current through it, wherein the formation's electrical resistance converts the current to heat. (Col. 4, line 67 to Col. 5 line 2). Shen '780, however, does not disclose or suggest preparing a sealing composition that includes a latex sealant or placing a heating tool in casing and operating the heating tool to heat a sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

In view of the foregoing, Applicants submit that Shen '780 fails to meet the requirements of MPEP §2131 with respect to claim 1 because Shen '780 fails to teach every element of this

claim. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 USC §102(b) over Shen '780 be withdrawn.

Claim 2 depends directly from claim 1 and therefore includes at least the same elements as claim 1. Accordingly, Applicants request that the rejection of claim 2 under 35 USC §102(b) over Shen '780 be withdrawn for at least the same reasons as noted above with respect to claim 1.

Claims 1-5 and 13 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 3,871,455 to Hardy et al. ("Hardy '455"). As noted above, claim 13 has been cancelled. Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Hardy '455 describes a method of heating an unconsolidated reservoir and subsequently injecting a material which becomes a bonding agent after the application of heat. (Col. 2, lines 47-50).

As provided in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." Hardy '455 fails to meet the requirements of MPEP §2131 with respect to claims 1-5 because Hardy '455 fails to teach or suggest each and every element of these claims.

Claim 1 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 1 includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Hardy '455.

Rather, Hardy '455 describes a process of formation consolidation in which the formation is heated and a substance which acts as a bonding agent when heated is then flowed into the formation. The bonding agent is a slurry of inorganic material such as calcium oxide, calcium oxychloride or Portland cement. (Col. 6, lines 9-13). Other materials which can be injected into

the formation to act as a bonding agent after the application of heat include a solution of organic material in a volatile liquor such as lucite and diethylene chloride; asphalt and benzene; epoxies and ketones; and polyvinyl chloride and alcohol. (Col. 6, lines 19-30). Plastics are additional materials which may be used to act as a bonding agent. (Col. 6, lines 31-32). Hardy '455, however, does not disclose or suggest preparing a sealing composition that includes a latex sealant and placing a heating tool in casing and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

In view of the foregoing, Applicants submit that Hardy '455 fails to meet the requirements of MPEP §2131 with respect to claim 1 because Hardy '455 fails to teach every element of this claim. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 USC §102(b) over Hardy '455 be withdrawn.

Claims 2-5 depend directly or indirectly from claim 1 and therefore include at least the same elements as claim 1. Accordingly, Applicants request that the rejection of claims 2-5 under 35 USC §102(b) over Hardy '455 be withdrawn for at least the same reasons as noted above with respect to claim 1.

Claims 1-6, 9 and 11 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,569,324 to Totten et al. ("Totten '324"). Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Totten '324 describes cementitious compositions and methods of using the compositions for performing well cementing operations. The cementitious compositions are described as including a cementitious material, water and a hardenable resinous material. (Col. 1, lines 62-66). The methods described in Totten '324 include forming a cementitious composition as described above, placing the cementitious composition in a desired location and permitting the composition to set into a hard environmentally safe cementitious mass therein. (Col. 2, lines 13-17).

As provided in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." Totten '324 fails to meet the requirements of MPEP §2131 with respect

to claims 1-6, 9 and 11 because Totten '324 fails to teach or suggest each and every element of these claims.

Claim 1 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 1 includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Totten '324.

Claim 9 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 9 includes preparing a sealing composition comprising an epoxy liquid comprising resin, associated hardener and inert filler material; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Totten '324.

Rather, Totten '324 describes cementitious compositions and methods of using the compositions for performing well cementing operations. Totten '324 discloses at Col. 4, lines 16-22 that:

"A variety of single component and multicomponent hardenable resinous materials can also be included in the cementitious compositions of this invention. Examples of suitable single component resinous materials which harden as a result of being heated when placed in a well bore or other warm location are vernonia oil and epoxidized linseed oil or soy oil."

Totten '324, however, does not disclose or suggest preparing a sealing composition that includes a latex or epoxy liquid sealant, placing a heating tool in casing and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

In view of the foregoing, Applicants submit that Totten '324 fails to meet the requirements of MPEP §2131 with respect to claims 1 or 9 because Totten '324 fails to teach every element of these claims. Accordingly, Applicants respectfully request that the rejection of claims 1 and 9 under 35 USC §102(b) over Totten '324 be withdrawn.

Claims 2-6 and 11 depend from claims 1 and 9, respectively, and therefore include at least the same elements as claims 1 and 9. Accordingly, Applicants request that the rejection of claims 2-6 and 11 under 35 USC §102(b) over Totten '324 be withdrawn for at least the same reasons as noted above with respect to claims 1 and 9.

Claims 1-7 and 14 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,135,577 to Brothers ("Brothers '577"). As noted above, claims 7 and 14 have been cancelled. Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Brothers '577 describes cement compositions and methods of use for cementing oil and gas and/or geothermal wells which reduce thermal thinning of slurries at elevated downhole temperatures. To combat thermal thinning, latex is added to a cement slurry without a latex stabilizing surfactant resulting in a slurry having low mixing viscosity and good solids suspension properties at downhole temperatures. (Abstract).

As provided in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." Brothers '577 fails to meet the requirements of MPEP §2131 with respect to claims 1-6 because Brothers '577 fails to teach or suggest each and every element of these claims.

Claim 1 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 1 includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Brothers '577.

Rather, Brothers '577 describes cement compositions which include latex. Latex causes cement slurries to gel as they are heated with the result that such a slurry has a low mixing viscosity at surface conditions and good solids suspension properties at elevated downhole temperatures. (Col. 2, lines 39-46). Brothers '577, however, does not disclose or suggest preparing a sealing composition that includes a latex sealant and placing a heating tool in casing and operating the heating tool to heat a sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

In view of the foregoing, Applicants submit that Brothers '577 fails to meet the requirements of MPEP §2131 with respect to claim 1 because Brothers '577 fails to teach every element of this claim. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 USC §102(b) over Brothers '577 be withdrawn.

Claims 2-6 depend directly or indirectly from claim 1 and therefore include at least the same elements as claim 1. Accordingly, Applicants request that the rejection of claims 2-6 under 35 USC §102(b) over Brothers '577 be withdrawn for at least the same reasons as noted above with respect to claim 1.

Claims 1-5, 13 and 14 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 3,417,816 to Morris et al. ("Morris '816"). As noted above, claims 13 and 14 have been cancelled. Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Morris '816 describes a method of cementing well casing in which after the borehole of a well is drilled to a desired depth, small diameter pipe having scratchers mounted on its outer surface is run into the well and moved vigorously while circulating a liquid to remove drilling cuttings and mud filter cake from the borehole wall through an interval to be cemented. A liquid sealing material, ordinarily a hydraulic cement, is displaced down the tubing to fill the borehole of the well above the level of the interval to be cemented. Movement of the small diameter pipe is continued while the sealing liquid is displaced into the well to reduce channeling of the sealing material. The small diameter pipe is then pulled from the well and casing is lowered into the desired position in the well. The sealing liquid is then allowed to set to form a solid material. Setting of the sealing material may be triggered by heating or radiation. (Abstract).

As provided in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." Morris '816 fails to meet the requirements of MPEP §2131 with respect to claims 1-5 because Morris '816 fails to teach or suggest each and every element of these claims.

Claim 1 is in independent form and is directed to a method for sealing casing in a borehole. The method of claim 1 includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Such a method is not disclosed, motivated or suggested by Morris '816.

Rather, Morris '816 describes a method of cementing well casing with a conventional hydraulic cement liquid sealing composition. Morris '816 does not disclose or suggest preparing a sealing composition that includes a latex sealant and placing a heating tool in casing and operating the heating tool to heat a sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

In view of the foregoing, Applicants submit that Morris '816 fails to meet the requirements of MPEP §2131 with respect to claim 1 because Morris '816 fails to teach every element of this claim. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 USC §102(b) over Morris '816 be withdrawn.

Claims 2-5 depend directly or indirectly from claim 1 and therefore include at least the same elements as claim 1. Accordingly, Applicants request that the rejection of claims 2-5 under 35 USC §102(b) over Morris '816 be withdrawn for at least the same reasons as noted above with respect to claim 1.

E. Rejections under 35 U.S.C. §103(a)

Claim 8 stands rejected under 35 U.S.C. §103(a) over Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 in view of U.S. Patent No. 6,330,917 to Chatterji et al.

("Chatterji '917"). Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Claim 8 depends indirectly from claim 1 and therefore includes at least the same elements as claim 1. Thus, claim 8 is directed to a method for sealing casing in a borehole that includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

As discussed above with respect to the rejections under 35 USC §102(b), none of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 disclose, motivate, or suggest a method for sealing casing in a borehole which includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

Chatterji '917 describes compositions and methods for cementing pipe in well bores. The compositions include hydraulic cement, an aqueous rubber latex, an aqueous rubber latex stabilizing surfactant, an epoxy resin, an epoxy resin hardening agent and porous precipitated silica which has been hydrophobicized with silicone oil. (Col. 2, line 66 to col. 3, line 2). Chatterji '917, however, does not disclose or suggest preparing a sealing composition that includes a latex sealant and placing a heating tool in casing and operating the heating tool to heat a sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Accordingly, Chatterji '917 does not supply the above-noted deficiencies of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 with respect to the subject matter of claim 1 and therefore, claim 8.

Therefore, contrary to the claimed method, the combination of the disclosure of Chatterji '917 with any of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 would still fail to disclose or suggest a method for sealing casing in a borehole which includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition. Accordingly, even if Chatterji '917 was properly combinable with any of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816, the combination would not result in the disclosure, motivation or suggestion of the claimed subject matter.

As provided in MPEP § 2143, "[t]o establish a prima facie case of obviousness, ... the prior art reference (or references when combined) must teach or suggest all the claim limitations." Furthermore, under MPEP § 2142, "[i]f the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness." It is submitted that the Office action does not factually support a prima facie case of obviousness of claim 8 based on Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 in view of Chatterji '917 for the following reasons.

Chatterji '917 fails to supply the deficiencies of Carter '089, Hardy '455, Totten '324, Brothers '577 and Morris '816 with respect to claim 8. While Chatterji '917 discloses compositions and methods for cementing pipe in well bores, the combination of such compositions and methods with the disclosures of any of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 fails to meet the standard presented by MPEP § 2143 which, as stated above, requires that the combined prior art references must teach or suggest all the claim limitations to establish a prima facie case of obviousness. For example, Chatterji '917 also fails to teach or suggest preparing a sealing composition that includes a latex sealant and placing a heating tool in casing and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

Clearly, the combination of any of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 with Chatterji '917 fails to disclose or suggest all the elements of claim 1. Since claim 8 depends from and includes the subject matter of claim 1, the combination of any of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 with Chatterji '917 fails to disclose or suggest all the elements of claim 8.

Furthermore, the MPEP provides in § 2143.01 that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." There is nothing in the disclosures of any of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 that suggests the desirability of combining such disclosures with the disclosure of Chatterji '917. Therefore, there is no basis for the combination of any of Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 with Chatterji '917 and it is respectfully submitted that the combination is improper.

In view of the foregoing, Applicants submit that Carter '089, Hardy '455, Totten '324, Brothers '577, Morris '816 and Chatterji '917, either alone or in combination, fail to satisfy each of the three requirements of a prima facie case of obviousness. Failure to satisfy even one of the requirements negates the prima facie case. Accordingly, Applicants submit that the rejection of claim 8 under 35 U.S.C. §103(a) over Carter '089, Hardy '455, Totten '324, Brothers '577 or Morris '816 in view of Chatterji '917 is improper and should be withdrawn.

Claims 11 and 12 stand rejected under 35 U.S.C. §103(a) over Cole '785 in view of Totten '324. Insofar as it may be applied to the present claims, this rejection is respectfully traversed.

Claims 11 and 12 depend directly or indirectly from claim 1, and therefore include at least the same elements as claim 1. Thus, each of claims 11 and 12 is directed to a method for sealing casing in a borehole that includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating

tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

As discussed above with respect to the rejections under 35 USC §102(b), neither Cole '785 nor Totten '324 disclose, motivate, or suggest a method for sealing casing in a borehole which includes preparing a sealing composition comprising a latex sealant selected from styrene butadiene copolymer latex, styrene butadiene acrylonitrile copolymer latex, vinyl acetate homopolymer latex, vinyl acetate acrylate copolymer latex, carboxylated styrene-butadiene copolymer latex, carboxylated acrylic copolymer latex and nitrile latex; placing the sealing composition between the casing and the borehole; placing a heating tool in the casing; and operating the heating tool to heat the sealing composition at the location of the heating tool to accelerate the setting of the sealing composition.

As provided in MPEP § 2143, "[t]o establish a prima facie case of obviousness, ... the prior art reference (or references when combined) must teach or suggest all the claim limitations." Furthermore, under MPEP § 2142, "[i]f the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness." It is submitted that the Office action does not factually support a prima facie case of obviousness of claims 11 and 12 based on Cole '785 in view of Totten '324 for the following reasons.

As noted above, each of Cole '785 and Totten '324 fails to disclose or suggest all the elements of claim 1 and neither reference supplies the deficiencies of the other reference with respect to the subject matter of claim 1. Since claims 11 and 12 depend from and include the subject matter of claim 1, the combination of Cole '785 and Totten '324 fails to disclose or suggest all the elements of claims 11 and 12.

Furthermore, the MPEP provides in §2143.01 that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." There is nothing in either of the disclosures of Cole '785 or Totten '324 that suggests the desirability of combining such disclosures. Therefore, there is no basis for the combination of Cole '785 with Totten '324 and it is respectfully submitted that the combination is improper.

In view of the foregoing, Applicants submit that Cole '785 and Totten '324, either alone or in combination, fail to satisfy each of the three requirements of a prima facie case of

obviousness. Failure to satisfy even one of the requirements negates the prima facie case. Accordingly, Applicants submit that the rejection of claims 11 and 12 under 35 U.S.C. §103(a) over Cole '785 in view of Totten '324 is improper and should be withdrawn.

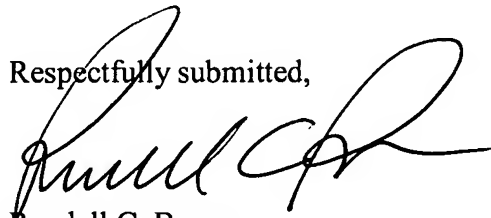
F. New Claims 23-28

New claims 23-28 are drawn to methods for sealing casing in a borehole and depend from claim 9. The subject matter described by claims 23-28 is allowable over the references of record for the same reasons as noted above with respect to claim 9.

G. Conclusion

It is believed that all matters set forth in the Office action have been addressed. Favorable consideration and allowance of claims 1-6, 8-12 and 23-28 are respectfully requested. Should the Examiner deem that an interview with Applicants' undersigned attorney would expedite consideration of claims 1-6, 8-12 and 23-28, the Examiner is invited to call the undersigned attorney at the telephone number indicated below.

Respectfully submitted,



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